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EXAMINER

NEURAUTER, GEORGE C

ART UNIT PAPER NUMBER

2143

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/003,531

Applicant(s)

DESHPANDE, SACHIN G.

Examiner

George C. Neurauter, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-20 and 22-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-20 and 22-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claims 1-8, 10-20, and 22-46 are currently presented and have been examined.

Response to Arguments

Applicant's arguments filed 21 December 2005 have been fully considered but they are not persuasive.

First, the Applicant has failed to show where in the specification the support for the amendments made to the claims. Therefore, the Examiner will rely on the specification alone to determine whether the amendments contain proper support under 35 USC 112.

The Applicant has argued that VNC fails to disclose the existence of two different protocols operating in the same network using distinct communication links coupled to a data server that is distinct from the client station. The Applicant has also argued on page 12, second paragraph from the bottom that "But a data server, as recited in claims 1 and 15, is absent". A "data server" is not recited in currently presented claims 1 and 15, therefore, all arguments regarding this limitation within these claims are rendered moot. However, a "data server" is recited in claim 46, therefore, the Examiner will treat this limitation within claim 46 as shown below, however, the Applicant has failed to make of record and,

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therefore, has not persuaded the Examiner as to why the addition of such a data server to the system is patentably distinct from the teachings of the prior art. Claim 46 simply recites that the server and data server communicate over a different communication protocol other than the remote desktop communication protocol which is interpreted to mean any of the number of the known communication protocols that exist within the prior art. The claim does not recite what data is communicated over this communication protocol from and/or to the data server and the server. The claim also does not recite any functional relationship the data server has with any other element within the claim other than the server which has a minimal association at best since the claim does not even recite and therefore require how and/or at any time that the data server and the server communicate any data over the communication protocol. Therefore, this added limitation is given little patentable weight by the Examiner. As shown in the rejection of claim 3, since the claim fails to specify how the data server functionally interrelates to the claimed elements, the Examiner interprets this limitation simply as another server anywhere within the Internet network system since the claim does not exclude this interpretation. Since servers are known to communicate to each other via the TCP/IP protocol as disclosed

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in "VNC" and using any other known communication protocol as conventionally known in the prior art, "VNC" does disclose this limitation.

Regarding the amendments added to the claims, the Applicant argues that Mairs does not disclose wherein the temporal compressor is adapted to XOR a portion of the user data from a current frame with a portion of the user data having a same spatial location in a previous frame to generate a difference map if the portion of the user data from the previous frame is in cache and the temporal compressor generates a difference table by run length encoding each scan line of the difference map, which the Applicant equates to be "temporal interframe compression". It is noted by the Examiner that in accordance with the broadest reasonable interpretation of the claims, the amendments do not specifically specify where the cache now recited resides within the system as claimed. Therefore, the Examiner will interpret this limitation wherein the cache may be anywhere within the system.

The Examiner is not persuaded by these arguments. As shown previously by the Examiner, within the teachings of "VNC", the MPEG codec inherently contains temporal or interframe compression of frames. The added limitations recite that the temporal compression XOR the previous and current frame together

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to generate a difference map and then run length encodes the difference map by each scan line of the difference map. While the specification does disclose performing a run length encoding on a difference map, a general search for a "scan line" within the specification wherein the difference map is run length encoded by each "scan line" was not found by the Examiner, therefore, the Examiner submits that this subject matter added to the claim in this amendment is considered to be new matter and is unsupported by the specification. If the Applicant traverses the Examiner's findings, the Applicant must show support for this limitation within the specification.

Assuming that this limitation is supported within the specification, as shown in the extrinsic evidence provided by the Examiner in this Office Action, particularly US Patent 5 515 388 to Yagasaki within columns 1-8, specifically columns 2-4, the simple XORing of the previous and current frame within a temporal compressor to produce a difference map and run length encoding the difference are processes known in the art as used in the MPEG compression scheme. The limitation "if the portion of the user data from the previous frame is in cache" is simply interpreted to mean that this step happens if the previous frame is in a memory, which happens at any subsequent step after the user data contains the first frame to be temporally encoded.

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Since the claim does not require where this cache is within the system, the Examiner interprets this limitation as being in the temporal compressor component within the server, since in view of the claimed limitations, there is no other way the temporal compressor can know if the previous frame is contained within the cache. This is also inherently taught in "VNC" as also shown in Yagasaki. Therefore, "VNC" inherently discloses these limitations. The claims are not in condition for allowance and are subject to the same rejections as applied previously.

Claim Interpretation

The element "user data" or "multimedia data" defined on page 3, lines 19 and 26-27 of the specification as admitted by the Applicant and recited in claims 1-39 will be given its broadest reasonable interpretation and will be interpreted by the Examiner as data that comprises audio, video, or any other data, or a combination of any or all of them that is consistent with the disclosures of the specification and the interpretation that those skilled in the art would reach. See MPEP § 2111.

The claims also use the phrase "adapted to". These phrases are interpreted as being material to patentability and therefore, in view of the claimed limitations, do not appear to raise an issue as to the limiting effects of the limitations that follow the "adapted to" phrase. See MPEP 2111.04.

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Claim Objections

Claims 40 and 42 are objected to because of the following informalities:

Claims 40 and 42 recite "...to the client station if difference map is smaller..." It should read "...to the client station if the difference map is smaller..."

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-8, 10-20, and 22-45 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims recite the limitation "...generating a difference table by run length encoding each scan line of the

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difference map". This limitation is not described in the specification.

Claims 40 and 42 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 40 and 42 recite wherein the thin client includes the cache. As explained above, there is no other way the temporal compressor can know if the previous frame is contained within the cache and the claims do not explain how the temporal compressor is able to detect if the previous frame is contained within the cache within the thin client by any sort of communication method. Therefore, one of ordinary skill in the art would not know how the cache that contains a previous frame can be within the client enables operation of the limitation "if the portion of the user data from the previous frame is in cache" as recited in claims 1 and 15 respectively. Further, even if the client contains the cache that contains the previous frame and the temporal compressor knows that the client cache contains, the temporal compressor has no way of performing the

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XOR operation since it does not have access to the previous frame user data.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7, 13-16, 19, 24-32, and 38-46 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over "Virtual Network Computing" ("VNC").

Regarding claim 1, "VNC" discloses a system for transmitting data (referred to throughout the reference as "VNC system"), comprising:

a server ("VNC server"; see Figure 1 on page 35) operable to generate user data ("pixel data") for use at a client station ("VNC viewer"; see Figure 1 on page 35); (page 33, specifically "In the virtual network computing (VNC) system, server machines supply not only applications and data but also an entire desktop environment that can be accessed from any Internet-connected machine...")

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a client station ("VNC viewer") coupled to the server and structured to receive compressed data; a decoder component of the client station that is operable to transform the compressed data into a frame portion and an image generator structured to generate an image from the frame portion and show the image in a form for use by a user of the client station. (page 35, Figure 1 and specifically, "The technology underlying the VNC system is a simple protocol for remote access to graphical user interfaces. It works at the framebuffer level...The endpoint with which the user interacts (that is, the display and/or display devices is called the VNC client or viewer. The endpoint where changes to the framebuffer originate...is known as the VNC server...An update represents a change from one valid framebuffer state to another. In this sense, an update is similar to a frame of video...an update is only sent by the server in response to an explicit request from the client. All screen changes since the client's last request are coalesced into a single update.")

"VNC" does not expressly disclose a spatial compressor component of the server, that is operable to inspect the user data and generate spatially compressed data therefrom and a temporal compressor component of the server that is operable to inspect the user data and generate temporally compressed data therefrom and wherein the temporal compressor is adapted to XOR

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a portion of the user data from a current frame with a portion of the user data having a same spatial location in a previous frame to generate a difference map if the portion of the user data from the previous frame is in cache and wherein the temporal compressor is adapted to generate a difference table by run length encoding each scan line of the difference map, however, "VNC" does disclose wherein the server uses MPEG encoding that inspects user data and generates compressed data therefrom (page 35, specifically "The endpoint where changes to the frame buffer originate (that is, the windowing system and applications) is known as the VNC server... there are numerous other possible schemes [for encoding]...MPEG encoding.").

It is inherent within the teachings of "VNC" that the MPEG encoding component contains a spatial and temporal compressor that generate spatial and temporal compressed data from user data wherein the temporal compressor is adapted to XOR a portion of the user data from a current frame with a portion of the user data having a same spatial location in a previous frame to generate a difference map if the portion of the user data from the previous frame is in cache and wherein the temporal compressor is adapted to generate a difference table by run length encoding each scan line of the difference map. The Examiner recognizes that to establish inherency, extrinsic

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evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. See *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999). The Examiner cites in this Office Action as extrinsic evidence "MPEG-1" which disclose that the MPEG encoding component contains a spatial and temporal compressor which takes a signal and performs a spatial and temporal compression on the signal (page 2, specifically the paragraph "A number of techniques are used to achieve a high compression ratio..."). The Examiner further cites US Patent 5 515 388 to Yagasaki which concurs with the findings above and also discloses wherein the temporal compressor is adapted to XOR a portion of the user data from a current frame with a portion of the user data having a same spatial location in a previous frame to generate a difference map if the portion of the user data from the previous frame is in cache and wherein the temporal compressor is adapted to generate a difference table by run length encoding each scan line of the difference map (column 3). Therefore, the extrinsic evidence provides a sufficient basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art."

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See *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) and MPEP 2112.

Claim 15 is also rejected since claim 15 recites a system for transferring data that recites substantially the same limitations as recited in claim 1.

Regarding claim 2, "VNC" discloses the system of claim 1 wherein the server and the client station are coupled to one another by a communication link ("Internet") (page 33, specifically "In the virtual network computing (VNC) system, server machines supply not only application and data but also an entire desktop environment that can accessed from any Internet connection machine..."), and wherein the server and the client station communicate to one another over the communication link using a remote desktop communication protocol ("VNC protocol"). (page 35, specifically Figure 1)

Claim 16 is rejected since claim 16 recites a system for transferring data that recites substantially the same limitations as recited in claim 2.

Regarding claim 3, "VNC" discloses the system of claim 2, further comprising a data server coupled to the server through a second communication link ("VNC protocol"), the server and the data server communicating by using a communication protocol other than the remote desktop communication protocol used by the

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server and the client station. (page 35, specifically "The protocol will operate over any reliable transport such as TCP/TP")

Claim 46 is rejected since claim 46 recites substantially the same limitations as recited in claim 1 and 3 in combination.

Regarding claim 4, "VNC" disclose the system according to claim 3, wherein the data server is a video server. (page 35, specifically "MPEG encoding for moving images" and "An update represents a change from one valid framebuffer state to another...an update is similar to a frame of video")

Regarding claim 5, "VNC" discloses the system according to claim 1, further comprising one or more additional client stations each of which is coupled to the server and structured to receive the spatially compressed data and the temporally compressed data. (pages 33 and 34, specifically "In addition, VNC allows a single desktop to be accessed from several places simultaneously, thus supporting application sharing...")

Claim 19 is rejected since claim 19 recites a system for transferring data that recites substantially the same limitations as recited in claim 5.

Regarding claim 6, "VNC" discloses the system according to claim 1 wherein the frame portion is a bitmap. (page 35,

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specifically "A set of rectangles of pixel data makes a framebuffer update...")

Regarding claim 7, "VNC" discloses the system according to claim 1, wherein the frame portion is one frame of a video. (page 35, specifically "MPEG encoding for moving images" and "An update represents a change from one valid framebuffer state to another...an update is similar to a frame of video")

Regarding claim 13, "VNC" discloses the system according to claim 1, further comprising a comparison component of the server that is operable to examine the user data, the spatially compressed data, and the temporally compressed data, and to select any combination therefrom to transmit to the client station. (page 35, specifically "Each rectangle may be encoded using a different scheme. The server can therefore choose the encoding most appropriate for the particular screen content being transmitted and the available network bandwidth.")

Regarding claim 14, "VNC" discloses the system according to claim 13 wherein the comparison component is structured to select the smallest combination or sub-combination of the user data, the spatially compressed data, and the temporally compressed data prior to transmitting it to the client station. (page 35, specifically "Each rectangle may be encoded using a different scheme. The server can therefore choose the encoding

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most appropriate for the particular screen content being transmitted and the available network bandwidth.")

Regarding claim 24, "VNC" discloses a method of transferring data in a system including a server coupled to a thin client by a communication link that carries a remote desktop protocol ("VNC protocol"), the method comprising:

on the server ("VNC server"):

generating multimedia data; compressing the multimedia data to make compressed multimedia data; transmitting a difference table to the thin client; (page 33, specifically "In the virtual network computing (VNC) system, server machines supply not only applications and data but also an entire desktop environment that can be accessed from any Internet-connected machine..."; page 35, specifically "The endpoint where changes to the frame buffer originate (that is, the windowing system and applications) is known as the VNC server... there are numerous other possible schemes [for encoding]...")

on the thin client ("VNC client" or "VNC viewer"; page 35, specifically "VNC is truly a 'thin-client' system."):

receiving the difference table from the server; decompressing the difference table into useable data; and presenting the useable data on the thin client. (page 35, Figure 1 and specifically, "The technology underlying the VNC system is

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a simple protocol for remote access to graphical user interfaces. It works at the framebuffer level...The endpoint with which the user interacts (that is, the display and/or display devices is called the VNC client or viewer. The endpoint where changes to the framebuffer originate...is known as the VNC server...An update represents a change from one valid framebuffer state to another. In this sense, an update is similar to a frame of video...an update is only sent by the server in response to an explicit request from the client. All screen changes since the client's last request are coalesced into a single update.")

"VNC" does not expressly disclose compressing the multimedia data temporally and spatially wherein temporal compression occurs by performing an XOR a portion of the user data from a current frame with a portion of the user data having a same spatial location in a previous frame to generate a difference map if the portion of the user data from the previous frame is in cache and wherein the temporal compressor is adapted to generate a difference table by run length encoding each scan line of the difference map, however, "VNC" does disclose wherein the server uses MPEG encoding that inspects user data and generates compressed data therefrom (page 35, specifically "The endpoint where changes to the frame buffer originate (that is,

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the windowing system and applications) is known as the VNC server... there are numerous other possible schemes [for encoding]...MPEG encoding.")

Claim 24 is rejected for the same reasons for the findings of inherency as provided for claim 1.

Regarding claim 25, "VNC" discloses the method of claim 24, further comprising storing the useable data in a cache on the thin client. ("framebuffer"; page 35, Figure 1 and specifically, "The technology underlying the VNC system is a simple protocol for remote access to graphical user interfaces. It works at the framebuffer level...")

Regarding claim 26, "VNC" discloses the method of claim 24 wherein presenting the useable data on the thin client comprises generating an image on a display screen. (page 35, Figure 1 and specifically, "The technology underlying the VNC system is a simple protocol for remote access to graphical user interfaces.")

Regarding claim 27, "VNC" discloses the method of claim 24, wherein presenting the useable data on the thin client comprises showing a video clip on a display coupled to the thin client. (page 35, specifically "MPEG encoding for moving images" and "An update represents a change from one valid framebuffer state to another...an update is similar to a frame of video")

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Regarding claim 28, "VNC" discloses the method of claim 27, wherein showing a video clip comprises showing a series of frames on the display. (page 35, specifically "MPEG encoding for moving images" and "An update represents a change from one valid framebuffer state to another...an update is similar to a frame of video")

Regarding claim 29, "VNC" discloses the method of claim 27, wherein generating multimedia data comprises: establishing a data connection with a video server; retrieving video data from the video server; and converting the video data to display data. (page 35, specifically "MPEG encoding for moving images" and "An update represents a change from one valid framebuffer state to another...an update is similar to a frame of video")

Regarding claim 30, "VNC" discloses the method of claim 24 wherein a plurality of thin clients are coupled to the server, the method further comprising transmitting the compressed multimedia data to the plurality of the thin clients coupled to the server. (pages 33 and 34, specifically "In addition, VNC allows a single desktop to be accessed from several places simultaneously, thus supporting application sharing...")

Regarding claim 31, "VNC" discloses the method of claim 30 wherein transmitting the compressed multimedia data to the plurality of the thin clients comprises transmitting the

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compressed multimedia data to the plurality of thin clients simultaneously. (pages 33 and 34, specifically "In addition, VNC allows a single desktop to be accessed from several places simultaneously, thus supporting application sharing...")

Regarding claim 32, "VNC" discloses the method of claim 24 wherein de-compressing the compressed multimedia data comprises creating bitmaps of data. (page 35, specifically "The display side of the protocol is based on a single graphics primitive: Put a rectangle of pixel data at a given x,y position.")

Regarding claim 38, "VNC" discloses the method according to claim 24 wherein compressing the multimedia spatially and temporally comprises:

performing a procedure on the multimedia data intended to compress the multimedia spatially and determining if the first procedure created a result smaller than the multimedia data. (page 35, specifically "Each rectangle may be encoded using a different scheme. The server can therefore choose the encoding most appropriate for the particular screen content being transmitted and the available network bandwidth.")

Regarding claim 39, "VNC" discloses the method according to claim 24 wherein compressing the multimedia spatially and temporally comprises:

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performing a procedure on the multimedia data intended to compress the multimedia temporally and determining if the procedure created a result smaller than the multimedia data. (page 35, specifically "Each rectangle may be encoded using a different scheme. The server can therefore choose the encoding most appropriate for the particular screen content being transmitted and the available network bandwidth.")

Regarding claims 40 and 42, "VNC" discloses the system of claim 1 and 15 respectively, where the client station or thin client includes the cache ("framebuffer") (page 3, section "A Single Graphics Primitive", specifically "For example, copy-rectangle encoding is very simple and efficient, and can be used when the client already has the same pixel data elsewhere in its framebuffer...A pixel-data caching scheme could efficiently encode multiple occurrences of the same text character by referring to the first occurrence")

Regarding claims 41 and 43, "VNC" discloses the system of claim 1 and 15 respectively.

"VNC" does not expressly disclose where the temporal compressor is adapted to indicate to the server that it should transmit the difference map to the client station if difference map is smaller than the portion of the user data from the current frame, however, "VNC" does disclose where the server

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transmits the difference map to the client station if difference map is smaller than the portion of the user data from the current frame (page 3, section "A Single Graphics Primitive", specifically "For example, copy-rectangle encoding is very simple and efficient, and can be used when the client already has the same pixel data elsewhere in its framebuffer...A pixel-data caching scheme could efficiently encode multiple occurrences of the same text character by referring to the first occurrence"; page 3, "Adaptive Update", specifically "A set of rectangles of pixel data makes a frame buffer updates (or simply, update). An update represents a change from one valid framebuffer to another...it usually affects only a small area of the framebuffer...All screen changes...are coalesced into a single update.").

Claims 41 and 43 are subject to the findings of inherency as provided for claim 1 and 15.

Regarding claim 44, "VNC" discloses the method of claim 24 where determining if the portion of the user data from a current frame is stored in the cache includes determining if the portion of the user data from a current frame is stored in the cache by keeping track of the cache contents of the thin client cache (page 3, section "A Single Graphics Primitive", specifically "For example, copy-rectangle encoding is very simple and

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efficient, and can be used when the client already has the same pixel data elsewhere in its framebuffer...A pixel-data caching scheme could efficiently encode multiple occurrences of the same text character by referring to the first occurrence"; page 3, "Adaptive Update", specifically "A set of rectangles of pixel data makes a frame buffer updates (or simply, update). An update represents a change from one valid framebuffer to another...it usually affects only a small area of the framebuffer...All screen changes...are coalesced into a single update.").

Regarding claim 45, "VNC" discloses the method of claim 24 where transmitting the difference table to the thin client occurs responsive to a determination that the difference table is smaller than the multimedia data. (page 3, section "A Single Graphics Primitive", specifically "For example, copy-rectangle encoding is very simple and efficient, and can be used when the client already has the same pixel data elsewhere in its framebuffer...A pixel-data caching scheme could efficiently encode multiple occurrences of the same text character by referring to the first occurrence"; page 3, "Adaptive Update", specifically "A set of rectangles of pixel data makes a frame buffer updates (or simply, update). An update represents a change from one valid framebuffer to another...it usually

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affects only a small area of the framebuffer...All screen changes...are coalesced into a single update.")

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
1. Claims 8-9, 20-21, and 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over "VNC" in view of US Patent 5 864 711 to Mairs et al.

Regarding claim 8, "VNC" discloses the system according to claim 1.

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"VNC" does not expressly disclose wherein the user data comprises data that is for the use of the client station at a first and a second time, wherein the temporal compressor is structured to perform an XOR operation using data for the use of the client station at the first and the second time as inputs, and produce a difference output, however, "VNC" does disclose wherein the server uses MPEG encoding that inspects user data and generates compressed data therefrom as shown above and wherein the MPEG protocol inherently contains a temporal compressor that performs an operation using data for the use of the client station at the first and the second time as inputs and produce a difference output (see "MPEG-1", specifically "The algorithm uses block-based motion compensation to reduce the temporal redundancy.")

Mairs does disclose performing an XOR operation (column 16, lines 16-23 and 40-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of these references since Mairs discloses that the method of compressing data using a temporal compressor to produce a differential output enables the output data to a client station to be transmitted in an optimal matter (column 2, lines 6-10). In view of these specific advantages and that both references

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are directed to transmitting data from a server to a client station using temporal compression, one of ordinary skill would have been motivated to combine these references and would have considered them to be analogous to one another based on their related fields of endeavor.

Claims 20 and 34 are also rejected since claims 20 and 34 recite a system and method for transmitting data that contain substantially the same limitations as recited in claim 8.

2. Claims 9, 21, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over "VNC" in view of US Patent 6 014 694 to Aharoni et al.

Regarding claim 9, "VNC" discloses the system according to claim 8.

"VNC" does not expressly disclose wherein the temporal compressor is further structured to perform a run length encoding on the difference output to create an encoded output, however, Mairs does disclose this limitation (column 17, lines 1-4).

Claim 9 is rejected since the motivations regarding the obviousness of claim 8 also apply to claim 9.

Claims 21 and 35 are also rejected since claims 21 and 35 recite a system and method from transferring data that contain substantially the same limitations as recited in claim 9.

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3. Claims 10, 22, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over "VNC" and Mairs as applied to claims 9, 21, and 35 above, and further in view of US Patent 5 818 877 to Tsai et al.

Regarding claim 10, "VNC" and Mairs disclose the system according to claim 9.

"NVC" and Mairs do not expressly disclose wherein the encoded output comprises one or more number pairs, wherein a first number of the number pair indicates the number of zeros in a current run, and wherein a second number of the number pair indicates a symbol following the last zero in the current run, however, Tsai does disclose these limitations (column 7, line 45-column 8, line 20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of these references since Tsai discloses that using number pairs in an encoded output allows for greater compression (column 8, lines 16-20). In view of these specific advantages and that the references are directed to using temporal encoding to create an encoded output, one of ordinary skill would have been motivated to combine these references and would have considered them to be analogous to one another based on their related fields of endeavor.

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Claims 22 and 36 are also rejected since claims 22 and 36 recite a system and method from transferring data that contain substantially the same limitations as recited in claim 10.

4. Claims 11, 23, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over "VNC", Mairs, and Tsai as applied to claims 10, 22, and 36 above, and further in view of US Patent 6 259 810 to Gill et al.

Regarding claim 11, "VNC", Mairs, and Tsai disclose the system according to claim 10.

"VNC", Mairs, and Tsai do not expressly disclose wherein if a last number of a row in the difference output to be run length encoded is a zero, for the last number pair in the encoded output, a first number of the last number pair indicates one less than the number of zeros in a current run, however, Gill does disclose these limitations (column 7, line 66-column 8, line 9; column 10, lines 4-46, specifically lines 35-46)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of these references since Gill discloses that the invention allows for greater compression of data (column 10, lines 13-14). In view of these specific advantages and that the references are directed to using temporal encoding to create an encoded output, one of ordinary skill would have been motivated to combine these

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references and would have considered them to be analogous to one another based on their related fields of endeavor.

Claims 23 and 37 are also rejected since claims 23 and 37 recite a system and method from transferring data that contain substantially the same limitations as recited in claim 11.

5. Claims 12 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over "VNC" in view of US Patent 5 742 728 to Yanagihara et al.

Regarding claim 12, "VNC" discloses the system according to claim 1.

"VNC" does not disclose wherein the temporal compressor creates a lossless temporal encoding of the user data, however, Yanagihara does disclose this limitation. (column 1, lines 22-29, specifically "Huffman code")

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of these references since Yanagihara discloses that MPEG uses a lossless temporal encoding in order to compress video data. In view of these specific advantages and that the references are directed to using MPEG temporal encoding to create an encoded output, one of ordinary skill would have been motivated to combine these references and would have considered them to be

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analogous to one another based on their related fields of endeavor.

Claim 33 is rejected since claim 33 recites a method that contains substantially the same limitations as recited in claim 12.

Regarding claims 41 and 43, "VNC" discloses the systems of claim 1 and 15 respectively, wherein the temporal compressor is adapted to indicate to the server that it should

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lakritz.

Regarding claim 15, Lakritz discloses the method as recited in claim 1 where said step of identifying includes the step of identifying site content requiring copying of said content for a predetermined site content subscriber as shown above regarding claim 14.

Lakritz does not expressly disclose wherein the identification step associates a HIDE flag with the site content requiring copying, however, Lakritz does disclose that the site content requiring copying is noted by the globalization management system. (column 9, lines 44-47)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Lakritz since the reference suggests that the site content

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requiring copying is noted by the globalization management system and that this notation is used to determine which site content requires content (column 9, lines 44-57). In view of these suggestions and teachings shown above, one of ordinary skill would have found it obvious to modify the reference so that any sort of notation associated with the site content including the use of a flag in order for the site content to be designated to be copied.

Conclusion

The prior art listed in the PTO-892 form included with this Office Action disclose methods, systems, and apparatus similar to those claimed and recited in the specification. The Examiner has cited these references to evidence the level and/or knowledge of one of ordinary skill in the art at the time the invention was made, to provide support for universal facts and the technical reasoning for the rejections made in this Office Action including the Examiner's broadest reasonable interpretation of the claims as required by MPEP 2111 and to evidence the plain meaning of any terms not defined in the specification that are interpreted by the Examiner in accordance with MPEP 2111.01. The Applicant should consider these cited references when preparing a response to this Office Action.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George C. Neurauter, Jr. whose telephone number is (571) 272-3918. The examiner can normally be reached on Monday through Friday from 9AM to 5:30PM Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/gcn/



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